



By Rebecca Quinn, CFM

### Time for another grab bag

Let's consider the **Base Flood Elevation and the Design Flood Elevation, a term used in building codes.**

Have you noticed that about one-quarter of your floodplain management regulations consists of definitions? When was the last time you read the definitions? That's not a rhetorical question – definitions are important! It is much too easy for meanings to morph over time, straying from precise definitions.

Building codes based on the International Codes define the terms base flood and base flood elevation (BFE). The codes also define design flood and design flood elevation (DFE). Why? The use of those terms goes back the 1998 editions of two standards referenced by building codes, notably ASCE 24, *Flood Resistant Design and Construction*.

If only it was as simple as the DFE is the elevation to which you design. But read the definitions and you'll see the design flood and DFE are solely to account for communities that use a different flood hazard map (or an additional map) than the map that shows the base flood, or the 1% annual chance flood. The vast majority of communities regulate using FEMA Flood Insurance Rate Maps, which means they regulate special flood hazard areas delineated to show the land inundated by the base flood.

If you skip reading the definitions and rely on an Internet search, you'll probably find hits that indicate the DFE equals the BFE plus freeboard. Technically, that is incorrect. But does it get you in trouble? Not really, because the end result is the same *for lowest floors*. Building codes and ASCE 24 specify lowest floor elevations like this: "...at or above the BFE plus 1 foot, or the DFE, whichever is higher." Now, if you think DFE equals BFE plus freeboard, substitute that into the "equation" and you get: "...to or above the BFE plus 1 foot [or BFE plus 1 foot], whichever is higher."

- **Bottom line:** The BFE equals the DFE when communities adopt and regulate flood hazard areas based on the FEMA Flood Insurance Study and Flood Insurance Rate Map.

#### **Manufactured homes and the 36-inch option.**

My how time flies. About 10 years ago I tossed out about a dozen questions and asked readers to let me know which piqued their interests. Over the years I've covered most of those topics, except for one that will still be of interest to floodplain managers and local coordinators for the NFIP Community Rating System communities. FEMA and ISO (which helps manage the CRS) recently announced a requirement for CRS communities to achieve (or keep) a CRS Class 8 or better. The topic I have in mind also is an important topic for any community concerned with long-term resiliency and the viability of a common type of low income housing.

#### **NFIP vs I-Code**

*Reducing Flood Losses Through the International Codes* is jointly issued by FEMA and the International Code Council. Chapter 3 describes the differences between the NFIP minimum and the I-Codes, including BFE vs DFE and more than 30 other topics. [Read it here.](#)

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The issue is called the “36-inch option” for replacement of manufactured homes in existing manufactured home parks and subdivisions that were established before the community joined the NFIP (sometimes called “pre-FIRM”). Unless a manufactured home is substantially damaged by flooding, the NFIP allows replacement homes to be installed on foundations that are at least 36 inches above grade. In some SFHAs, this allows replacements below the base flood elevation.

The 36-inch option came about after significant opposition to 1986 amendments that would have required replacement manufactured homes to be installed with lowest floors at or above the BFE. Probably prompted by a letter writing campaign objecting to the rule, Congress intervened in early 1987, suspending the rule and requiring FEMA to report on the impact of the rule. The report, delivered in late 1988, led to the regulation we have today, which was adopted in late 1989.

Don’t get me wrong, I thought the 36-inch option wasn’t a good idea when it was proposed 25 years ago and joined others to submit formal comments to that effect. For the same depth of water inside, manufactured homes sustain considerably more damage than conventional construction. That means I support the CRS objective to require all manufactured homes to be elevated to at least BFE plus 1 ft. I just wonder if potential adverse impacts were considered (did they research the report to Congress?).

Did the CRS task force consider the social and economic impacts in some CRS communities that have a large number of manufactured homes in existing parks and subdivisions, often occupied by low-income, minority, and elderly residents? Yes, I agree we want to lessen the impact of flooding on residents who are least able to afford to be flooded. But consider the tough choice some communities may face: preserve CRS premium discounts, which likely primarily benefit owners above the low-income level, or require full elevation (plus freeboard) with higher installation costs, which park landlords will just pass along to tenants.



By Ray Carroll, MAI, SRA, CFM

In the September issue I promised to write about the challenges of estimating a property’s market value for use in substantial improvement and substantial damage determinations. Deciding where to start was a little daunting because there is so much confusion, and so much to explain. Let’s just jump into the issue of “use and occupancy,” and see where the discussion goes. First, we’ll get on the same page with terminology and take a look at what’s in FEMA publications. Then I’ll share some notes on appraisal practice, state the issue, and share some examples based on real situations.

**Terminology:** I’ll use either *structure value* or *building value* to mean the value that is used in the SI/SD determination. When I mean the market value of a parcel of land including all improvements, I’ll use the term *whole-property value*.

**FEMA guidance:** The only FEMA publications I could find that address use/occupancy are the [SI/SD Desk Reference](#) (FEMA P-758) and [FEMA 480](#), the floodplain management desk reference:

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- “Only the market value of the structure is pertinent. The value of the land and site improvements (landscaping, driveway, detached accessory structures, etc.) *and the value of the use and occupancy (business income)* are not included.” [P-758, Sec. 4.5]
- “Note that using the “income capitalization approach” is not acceptable because it is based on how the property is used, and not the value of structure alone.” [P-758, Sec. 4.5.1 and 480, Unit 8]
- “When a professional appraisal of market value is submitted, the local official is responsible for examining it to determine that it is reasonable for the specific characteristics of the building and to check that it does not include the value of land, land improvements (e.g., landscaping, paving), and accessory buildings. *The market value of a non-residential building does not include the value of the use or occupancy.*” [P-758, Sec. 4.5.1]

**A few notes on appraisal practice:** *Whole-property value* estimates are developed under these fundamental appraisal concepts:

- Land (the site) is always valued as though vacant and available to be put to its highest and best use.
- Highest and best use is an economic concept that applies equally to vacant land and to improved property.

Highest and best use analysis is a process-of-elimination that reaches a conclusion by sequentially eliminating from consideration those potential uses that aren't physically possible, legally permissible, and financially feasible. A conclusion of highest and best drives development of appropriate approaches to value. Appraisal approaches to *whole-property value* (cost-depreciation, direct sales-comparison, and income-capitalization) are analytical tools appraisers use to rationalize the behavior of real estate market participants. Each valuation approach will yield a *whole-property value* indication that is convincing depending on how well it mimics the thinking and actions of market participants. All *whole-property value* approaches find their origin in a single body of related economic data (the real estate market). Thus, most of the time the *whole-property value* indications the approaches yield will fall close to one another. When more than one approach is developed, the appraiser considers the relative applicability and dependability of the approaches before reaching a reconciled conclusion.

**The issue:** From the SI/SD Desk Reference guidance, it sounds like the use/occupancy issue is related only to non-residential structures, and the income capitalization approach can't be used because that valuation method is based on how the property is used. That's not entirely true. The issue derives from how the real estate market values vested, non-conforming buildings that enjoy a competitive advantage over buildings in areas more constrained by land development regulations. The use/occupancy issue applies to both commercial and residential property situations, and it shows up in the sales-comparison and income-capitalization approaches. **Importantly, questions about use/occupancy don't come up at all in Actual Cash Value (ACV) appraisals because ACV determines ONLY the structure value.** To illustrate the issue, I'll walk you through three hypothetical cases developed from real-world situations where I've made appraisals or consulted to floodplain administrators.

**Example 1 – Commercial:** Consider a two-story commercial building of 5,000 sq. ft. (a restaurant/bar) that is in the floodplain close to the beach in a popular resort community. It was built over 50 years ago when

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setbacks, lot coverage ratios, and parking requirements were less stringent, and when ground level construction was permitted. Whether the small site is buildable at all under the current land development regulations is doubtful. There have been many repairs and renovations, and the structure is immaculately maintained. The restaurant is very popular with the downtown lunch crowd, the bar is busy all day with walk-in beach traffic, and it's been a night-time hot spot for years.

The property owner applies for a building permit, triggering an SI/SD determination. Using the adjusted county tax assessor's value yields a low *building value*, so the property owner elects the professional appraisal option. The certified appraiser develops two approaches (cost-depreciation is not applicable in these unusual situations) and concludes a reconciled *whole-property value*:

- Sales-comparison approach: \$3,200,000 (three or more good comparables)
- Income-capitalization approach: \$2,900,000 (thorough & well documented)
- Reconciled *whole-property value*: \$3,000,000

The land value was estimated to be \$500,000 based on a detailed and convincing sales-comparison approach. Improvements to the site other than the restaurant/bar building were estimated to contribute \$100,000. Using the reconciled *whole-property value*, that works out to a depreciated *structure value* of \$2,400,000 (\$3,000,000 minus \$500,000 minus \$100,000) and a unit cost of \$480 per sq. ft. The floodplain administrator thinks that unit cost is higher than it would cost to replace the existing building with all new construction.

The floodplain administrator returns the appraisal, citing FEMA guidance against use of the income-capitalization approach. The appraiser issues a revised report, deleting the income-capitalization approach, resulting in a *whole-property value* of \$3,200,000 supported by sales comparison. Now the depreciated *structure value* is \$2,600,000 or \$520 per sq. ft.

ACV is the most straight-forward and often the only approach that really works when sales comparables aren't available.

What's wrong with this? Well, nothing, if you believe that the use/occupancy issue only shows up in the income-capitalization approach. There are many properties like this example. Usually the sale price paid reflects the extra value sometimes found in vested, non-conforming properties (sometimes called "grandfathered") that enjoy an economic advantage over properties more constrained by current regulations. The extra value is in the building, not the site. You can prove that by asking yourself, "What happens to the *whole-property value* if the building burns down?" Hint: The land value doesn't change, because land value is always estimated as though the parcel is vacant.

**Example 2 – Multi-family residential:** There's a 10-unit apartment building of 7,500 sq. ft. that's popular with working singles and retirees. The site meets required setbacks, and it has ample parking and open space. Development occurred prior to community-wide zoning code revisions that changed the site developable density (as though vacant) from 10 units to six units. FIRM map revisions make the building subject to floodplain management requirements. Despite excellent maintenance, the roof needs replacement and kitchens need renovation.

An SI/SD determination is triggered when the owner's contractor applies for permits. The floodplain administrator recommends the professional appraisal option to estimate the *building value*. The certified

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appraiser, following FEMA guidance, can develop only the sales-comparison approach. For purposes of this example, let's assume there are enough comparable sales, and the appraiser estimated a *whole-property value* of \$1,500,000.

The land value was estimated to be \$300,000 based on a detailed sales-comparison approach. Improvements to the site other than the apartment building were estimated to contribute \$125,000. Depreciated *structure value* is reported to be \$1,075,000 (\$1,500,000 minus \$300,000 minus \$125,000) or \$143 per sq. ft., which is more than twice what the county tax assessor has for the building.

If we developed an income-capitalization approach for this vested, non-conforming property, it would yield a *whole-property value* very close to that obtained by the sales-comparison approach. As before, if a tornado wiped out the building overnight, the site value wouldn't change, but the \$1,075,000 value of the apartment building would be lost.

Can this issue exist for a single residence? Let's take a look at an example.

**Example 3 – Single unit residence:** Fronting the beach and built on low piers essentially at ground level is the cutest little 1,000 sq. ft. wood-frame cottage you ever saw. It was built in 1948, but nicely modernized over the last decade or so. To one side is a new, V-Zone compliant, three-story residence. On the other side is another cottage, a little larger, built in the 1950s. The community has an active market in beachfront sites as cottages are torn down and redeveloped. A vacant beachfront lot costs \$2,500,000 and under current building codes it would cost at least another \$1,500,000 to building a new residence. Properties with the small old cottages are still popular because for \$2,750,000 you have one-floor living (no stairs), can rent it any time you want, and you'll enjoy living right on the beach.

Which appraisal is reliable? Which can you accept? Well, based on FEMA guidance, both are acceptable. That certainly puts the floodplain administrator in a difficult spot. How would you handle the differences?

One day the community receives two permit application packages, each accompanied by a qualified professional appraisal. The two properties are almost identical in terms of site characteristics, and the age, size, and condition of the charming cottages. The appraisal for one property reports a \$2,750,000 estimate of *whole-property value* developed by the sales-comparison approach. The land value of \$2,500,000 is well documented and there are no other site improvements, which means the depreciated *building value* is \$250,000. The appraisal for the other property reports an actual cash value estimate of \$125,000, supported by a detailed cost estimate from a recognized cost service, and a thorough analysis of physical depreciation.

Which appraisal is reliable? Which can you accept? Well, based on FEMA guidance, both are acceptable. That certainly puts the floodplain administrator in a difficult spot. How would you handle the differences?

**Conclusion and recommendation:** The use/occupancy issue exists for commercial and non-commercial properties alike, and it shows up in both the sales-comparison approach and the income-capitalization approach. What can you do to avoid the issue? You can promote actual cash value as the preferred approach for estimating market value. ACV is the most straight-forward and often the only approach that really works when sales comparables aren't available. I understand a growing number of communities are modifying ordinances or policies to make ACV the preferred approach.